

METHOD AND APPARATUS FOR PREDICTING MULTI-PART
PERFORMABILITY

ABSTRACT

5 A method of and apparatus for determining whether a multi-component target
system meets a given multi-part performability requirement is provided. A description of
the target system, failure probabilities for components of the target system and a multi-
part performability requirement for the target system are obtained. The multi-part
performability requirement indicates desired performance levels and corresponding
10 fractions of time. One or more failure-scenarios are successively computed that represent
one or more states of the target system having zero or more components failed and a
corresponding probability of occurrence of the one or more of the states of the target
system. Performance of the target system is modeled under the failure scenarios using a
performance predictor module for generating a multi-part performability function. The
15 multi-part performability function is compared with said multi-part performability
requirement to determine whether the target system meets the multi-
part performability requirement.